

“PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY IN SELECTED MSME CLUSTERS IN INDIA”

To develop and promote a market environment for introducing energy efficiency and enhanced use of renewable energy technologies in process applications in the selected energy-intensive MSME clusters, United Nations Industrial Development Organization (UNIDO) in collaboration with Bureau of Energy Efficiency (BEE) is implementing a project titled “Promoting Energy Efficiency and Renewable Energy in selected MSME clusters in India” funded by Global Environment Facility (GEF) and co-financed by Ministry of Micro, Small and Medium Enterprises (MoMSME) and Ministry of New and Renewable Energy (MNRE).

Air booster implementation in compressed air system to achieve the required pressure

Objective

To optimize energy consumption by installing the air booster to deliver high pressure at specific points and then reducing overall set pressure of the system.

Implementation

Industry installed a 1:2 air booster in the coil forming machine and jet pump testing area, where the required pressure is higher than the rest of the operations. Further, reduced the set pressure of the compressor from 8-10 bar to 6-7 bar.

Principle

In industries, some processes need higher pressure compared to others. In those cases, increasing the overall system set pressure will increase the specific energy consumption of the system. In order to get a higher output pressure, air boosters are installed. Air boosters produce desired output pressure without increasing the inlet pressure. They are compact, portable, efficient and low-cost solution for boosting compressed air pressure.



₹ 50,400



Investment

₹ 50,000



Pay Back

12 Months



Unit Profile

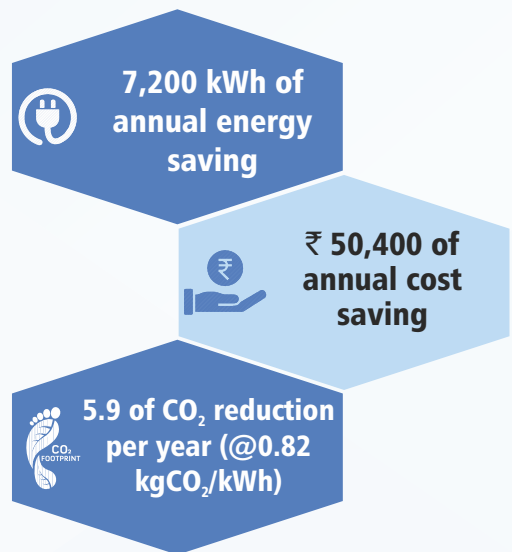
EnBest pumps is a small-scale pump assembly division located at Somayampalayam, Coimbatore. The average monthly production of the unit is around 2500 pumps.



Benefits

- Overall energy consumption reduced in the compressed air system.
- Efficiency of the compressor is improved.
- Operating pressure reduced from 8-10 bar to 6-7 bar.

Outcomes



Replication Potential

In the units, where most of the processes run at a lower pressure and only few processes require high pressure

Cost Economics

Energy savings per day	24 kWh
Energy saving per annum	7,200 kWh
Cost savings per year	₹ 5,400 (₹ 7 /kWh)
Investment cost	₹ 50,000
Simple Payback period	12 months



Calculation

Energy savings per annum (kWh/year) = (Energy consumption before implementation - after implementation, kWh/day) * no of working days /year

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